Hot Tips

Good info for the new ham, and old stuff to refresh your memory

Which wire gauge to use

Whether we're building a project or replacing a damaged item, we often struggle deciding what gauge (size) of wire we need for the task. This is an abbreviated list of recommended wire gauges based on use and environment.

It might be apparent that, as the wire gauge numbers get larger, the wire sizes get smaller, a result of the original 1857 agreement known today as American Wire Gauge, or AWG. Here are my recommendations listed by usage, and please keep in mind that they *are* recommendations, unless otherwise stated:

Antenna elements

An antenna element is simply a wire used for conducting RF (radio frequency) signals from your feed line (such as coaxial cable) to the air, such as on a dipole. The primary difference here is the length, based presumably on frequency; the longer the wire, the thicker it needs to be. Also, solid copper is more prone to stretching and breaking in the wind, while stranded copper exhibits greater loss.

Under 15 MHz = **14 AWG** (stranded, insulated)

Over 15 MHz = **18 AWG** (stranded, insulated)

Grounding

There are typically three locations to consider ground wiring, and each has a purpose that requires a different wire size.

From ground rod to mast = **4 AWG** or **6 AWG** (solid or stranded, insulated or bare)

From equipment to ground panel = **10 AWG** (stranded, insulated)

Between ground rods = **4 AWG** (solid, bare)

DC power cables

Wires used for supplying power (voltage and current) between your power supply and a piece of equipment should follow the recommendations of the equipment. For supplying power to radios and amplifiers, I recommend

Under 6 A = **12 AWG** (stranded, insulated)

Over 6 A = **10 AWG** (stranded, insulated)

Antenna radials

An antenna radial is a wire that serves as a ground balance (counterpoise) to the radiating element, and is either buried or elevated (over your roof).

Permanent = **14 AWG** (stranded, insulated)

Portable = **18 AWG** (stranded, insulated)

Tiger tail = **18 AWG** (stranded, insulated)

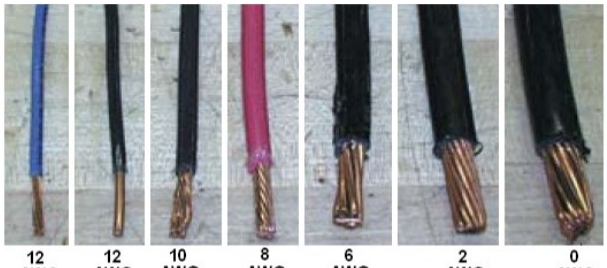
Transformer windings

When I wind a *matching* transformer for a balun or unun, I typically use the following:

4:1 = **18 AWG** (stranded, insulated)

9:1 = **22 AWG** (solid, insulated)

49:1 = **14 AWG** (solid, enameled)



Finally

This list is by no means comprehensive, but can get you going in many, if not most, amateur radio applications. Also, this reflects my own observations and my opinions, so your own experiences and needs might vary.

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